

### Appendix E.7: Ice Storm

Ice storm hazard vulnerability and loss estimates were assessed for general property (e.g., buildings, vehicles, etc. as collected by NOAA) based on the number of incidents that have occurred in the 34 parishes for which incidents were reported during 1950 through 2002.

#### Hazard Ranking

The ice storm hazard ranking was based on parish-wide vulnerability. The level of vulnerability was based on the total number of historical incidents reported in the NOAA data, by parish. In establishing the hazards ranking, all incidents were assumed to have equal impacts, since the level of severity could not be determined from the existing data.

The high / medium / low rankings for each parish were developed by:

- Obtaining the NOAA data by parish;
- Sorting the list by parish from highest to lowest losses;
- Establishing breaks to rank each parish with a high, medium or low classification;
- Assigning the high rank to parishes with four or more historical incidents;
- Assigning the medium rank to parishes where historical incidents are less than four but greater than or equal to one; and
- Assigning the low rank to parishes with no historical incidents.

The resulting ranked parishes are shown in in Table E-28. Map E-13 presents the ranking of all the parishes with high, medium and low risk to ice storms.

**Table E-28. Ice Storm Ranking for Louisiana Parishes**

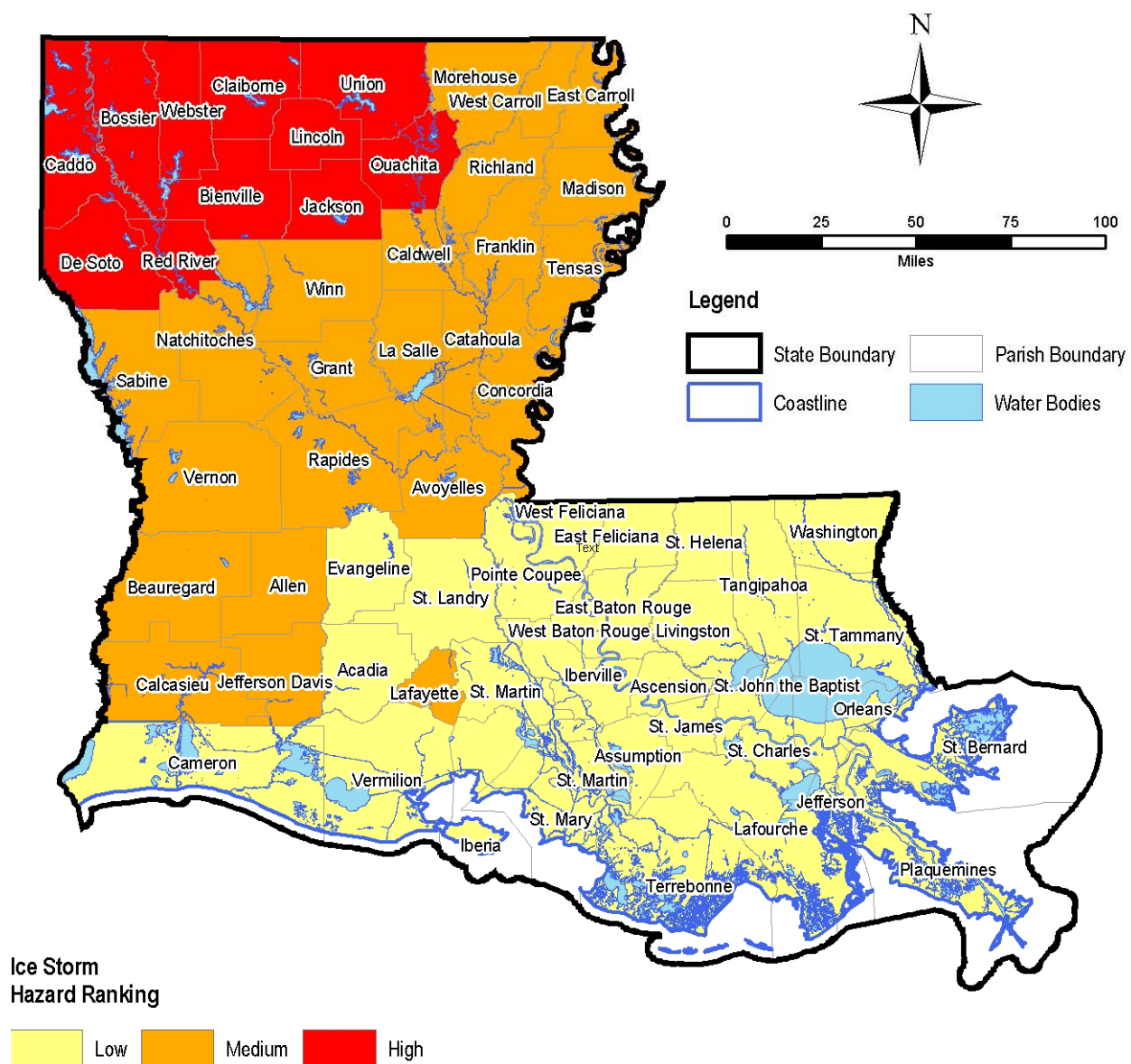
	Incident Level
Bienville	High
Bossier	High
Caddo	High
Claiborne	High
Desoto	High
Jackson	High
Lincoln	High
Ouachita	High
Red River	High
Union	High
Webster	High
Allen	Med
Avoyelles	Med
Beauregard	Med
Calcasieu	Med
Caldwell	Med
Catahoula	Med
Concordia	Med
East Carroll	Med
Franklin	Med
Grant	Med
Jefferson Davis	Med

**Table E-28 (continued)**

	Incident Level
La Salle	Med
Madison	Med
Morehouse	Med
Natchitoches	Med
Rapides	Med
Richland	Med
Sabine	Med
Tensas	Med
Vernon	Med
West Carroll	Med
Winn	Med
Acadia	Low
Ascension	Low
Assumption	Low
Cameron	Low
East Baton Rouge	Low
East Feliciana	Low
Evangeline	Low
Iberia	Low
Iberville	Low
Jefferson	Low
Lafayette	Low
Lafourche	Low
Livingston	Low
Orleans	Low
Plaquemines	Low
Pointe Coupee	Low
St. Bernard	Low
St. Charles	Low
St. Helena	Low
St. James	Low
St. John the Baptist	Low
St. Landry	Low
St. Martin	Low
St. Mary	Low
St. Tammany	Low
Tangipahoa	Low
Terrebonne	Low
Vermilion	Low
Washington	Low
West Baton Rouge	Low
West Feliciana	Low

## Appendix E - Statewide Risk Assessment (continued)

Map E-13: Ice Storm Hazard Ranking for Louisiana Parishes



## Methodology

The process for assessing ice storm risk is essentially the same as the methodology used for high winds due to tornados (refer to Section E.6 – Methodology). Incident and historic loss data was used to provide a statewide AEL for the 34 parishes which have had reported historic losses due to ice storm. The number of incidents was also used to develop a hazards ranking by parish.

Historical winter storms reported for the State are included in Table E-29. Over the past 52 years, six fatalities, 21 injuries and over \$202.2 million in property damage have occurred in 34 parishes. Since historical monetary losses were grouped by more than one parish in the data provided, it was not possible to determine loss estimates for individual parishes. However, the annualized expected property loss for these 34 parishes is \$25,524,750.

**Table E-29. Historical Winter Storms for State of Louisiana (1950-2002)**

Parish(es)	Date	Type	Fatalities	Injuries	Property Damage (\$)	Crop Damage (\$)
De Soto	3/12/93	Heavy Snow	0	0	0	0
Bienville, Bossier, Caddo, Carroll, Clairborne, De Soto, Lincoln, Morehouse, Ouachita, Red River, Sabine, Union, Webster	2/10/94	Ice Storm	0	0	50,000,000	0
Carroll, Catahoula, Concordia, Franklin, Madison, Morehouse, Richland, Tensas	2/1/96	Ice Storm	0	0	900,000	0
Vernon	2/1/96	Ice Storm	0	0	200,000	0
Rapides	2/1/96	Ice Storm	0	0	500,000	0
Avoyelles	2/1/96	Ice Storm	0	0	200,000	0
Ouachita	2/3/96	Ice Storm	0	0	30,000	0
Caddo	2/3/96	Ice Storm	1	0	15,000	0
Bienville, Bossier, Caddo, Caldwell, Clairborne, De Soto, Jackson, Lincoln, Natchitoches, Ouachita, Red River, Union, Webster, Winn	1/6/97	Ice Storm	0	0	0	0
Bienville, Bossier, Caddo, Caldwell, Clairborne, De Soto, Grant, Jackson, La Salle, Lincoln, Natchitoches, Ouachita, Red River, Sabine, Union, Webster, Winn	1/12/97	Ice Storm	0	0	0	0
Allen, Avoyelles, Beaugard, Calcasieu, Jefferson Davis, Lafayette	1/12/97	Ice Storm	2	15	11,900,000	0
Bienville, Bossier, Caddo, Caldwell, Clairborne, De Soto, Grant, Jackson, La Salle, Lincoln, Natchitoches, Ouachita, Red River, Sabine, Union, Webster, Winn	12/22/98	Ice Storm	1	0	1,000,000	0
Carroll, Franklin, Madison, Morehouse, Richland, Tensas	12/22/98	Ice Storm	0	0	4,100,000	0
Bienville, Bossier, Caddo, Clairborne, De Soto, Jackson, Lincoln, Ouachita, Red River, Union, Webster	1/26/00	Ice Storm	0	0	0	0
Carroll, Madison, Morehouse, Richland	1/27/00	Ice Storm	0	0	370,000	0
Bienville, Bossier, Caddo, Clairborne, De Soto, Lincoln, Red River, Union, Webster	12/12/00	Ice Storm	1	1	27,000,000	0
Caddo	12/13/00	Ice Storm	1	1	0	0

## Appendix E - Statewide Risk Assessment (continued)

Table E-29 (continued)

Parish(es)	Date	Type	Fatalities	Injuries	Property Damage (\$)	Crop Damage (\$)
Bienville, Bossier, Caddo, Clairborne, Jackson, Lincoln, Ouachita, Union, Webster	12/24/00	Ice Storm	0	0	106,000,000	0
Rapides, Vernon	1/1/01	Winter Storm	0	4	55,000	0
Baton Rouge, Feliciana, Iberville, Livingston, Pointe Coupee, St.Helena, St.Tammany, Tangipahoa, Washington	1/1/02	Winter Storm	0	0	0	0
TOTAL (\$)			6	21	202,270,000	0

Source: NOAA

Vulnerability was assessed at the parish level based on the number of recorded historic incidents. These results were reported as the hazards ranking. A separate analysis was not performed, as the ranking identified that 34 parishes have had the greatest losses, and can therefore be considered vulnerable.

The analysis for ice storm loss estimates used NOAA historical winter storm incidents data to determine the AEL at the statewide level. Loss estimates could not be provided for each parish because the NOAA data provides historic losses by event; not by parish.

AEL was estimated by analyzing the number of historical incidents and losses. The AEL addresses the two key components of risk: the probability of the hazard occurring in the study area and the consequences of the hazard, largely a function of building construction type and quality, and of the intensity of the hazard event. By annualizing expected losses, the AEL factors in historic patterns of frequent smaller events with infrequent but larger events to provide a balanced presentation of the risk.

The general steps used in the statistical risk assessment methodology are identical to those used for the tornado analysis; refer to Appendix E.6.

### Data Limitations

Historic dollar losses were grouped by more than one parish for each incident. Therefore, it was not possible to determine loss estimates for individual parishes. The historic losses include vehicles as well as buildings, so losses to the general building stock could not be separated out from the reported losses.

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